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| 10/660,036 | 09/11/2003 | Anson Lee | 706618US1 | 5793 |

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EXAMINER

MCCALL, ERIC SCOTT

ART UNIT PAPER NUMBER

2855

DATE MAILED: 03/02/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/660,036

Applicant(s)

LEE ET AL.

Examiner

Eric S. McCall

Art Unit

2855

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 21 December 2004.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-10 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-10 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____

ENGINE MISFIRE DETECTION

FINAL OFFICE ACTION

This action is in response to the Applicant's correspondence of Dec. 21, 2004.

TITLE

As set forth in the previous office action (9/27/04), the title of the invention was objected to because it was not descriptive. A new title was/is required that is clearly indicative of the invention to which the claims are directed.

However, the Applicant has questioned the objection and requested further clarification.

First, the Examiner notes that there is now some uncertainty as to the correct title of the Applicant's application.

The Examiner's objection was based on the title "ENGINE MISFIRE DETECTION" which was obtained from the bibliographic data sheet. But, the title presented in the header of the Applicant's response was "ENGINE MISFIRE DETECTION USING SYSTEM IDENTIFICATION TECHNOLOGY".

Clarification is requested on the actual title of the patent application.

If indeed the title “ENGINE MISFIRE DETECTION USING SYSTEM IDENTIFICATION TECHNOLOGY” is correct, the Examiner will withdraw the objection thereto and the Applicant can disregard the following.

The title “ENGINE MISFIRE DETECTION” was deemed as not being descriptive because the title was not clearly indicative of the claimed invention. Thousands of patents and numerous patent applications are directed to engine misfire detection, and thus, to use a generic title like “Engine Misfire Detection” impedes the examination process because such a title creates great difficulty in properly identifying prior art.

For if all prior art related to the subject matter of the Applicant’s application was merely titled “Engine Misfire Detection” great difficulty would exist in properly locating relevant prior art within the strict time constraints given to Examiners to properly examine a patent application.

Therefore, a clearly indicative title aids greatly in the examination process in order to proper and quickly identify relevant prior art.

CLAIMS

35 U.S.C. § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

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(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1-10 are rejected under 35 U.S.C. 103(a) as being unpatentable over Scherer et al. (5,889,204).

With respect to claims 1 and 7, Scherer et al. suggest a method/system of detecting misfire in an engine comprising:

detecting engine speed fluctuations (col. 3, lines 1/2);
determining a linear model based on the engine speed fluctuations (col. 4, lines 48-51);
applying a Kalman filter to the linear model to determine parameters of the linear model (col. 2, lines 1-12).

Scherer et al. fail to teach detecting a misfire (engine firing) event in the engine based on the linear model as claimed.

However, it would have been obvious to one having ordinary skill in the art armed with said teach to detect an engine firing event such as a misfire based on the linear model as claimed.

The motivation being that Scherer et al. teach that the object of their device is to determine an engine load even during non-steady-state operation (col. 2, lines 61-65) wherein non-steady-state operation is caused by vibrating piston travel movement (col. 1, lines 34-40), and because vibrating piston travel movement is well known to include engine firing events such as misfire events.

Evidence to this well known fact can be found in the teaching of Komurasaki (5,119,783) at col. 2, lines 10-30 in which the Examiner is relying upon as a teaching reference to demonstrate such a relationship in response to the Applicant's request for such evidence.

With respect to claims 2 and 8, Scherer et al. suggest representing a linear model as a difference equation (col. 5).

With respect to claims 3 and 9, Scherer et al. suggest the claimed subject matter thereof (col. 2, lines 1+).

With respect to claims 5 and 10, Scherer et al. suggest determining a load compensator signal based on an engine speed and a manifold absolute pressure (col. 4, lines 1-15).

With respect to independent claim 6, said claim parallels that of claim 1. Thus the Applicant's attention is directed to the above comments pertaining to claim 1 and to claim 2.

Response to Arguments

The Applicant's arguments have been considered but have not been found to be persuasive. Specifically, the Applicant has argued that no support exists for the Examiner's position that vibrating piston travel movement includes that of engine misfire events because the teaching of Scherer et al. is totally silent on the concept of engine misfire detection.

However, the Examiner points out that if the teaching of Scherer et al. specifically taught the concept of engine misfire detection, the rejection would have been made under 35 USC 102 and not 35 USC 103. Thus, it is improper to argue a rejection made under 35 USC 103 as if the rejection was made under 35 USC 102.

The Applicant's argument that the Examiner's conclusion appears to have been reached only with the assistance of Applicants' disclosure is incorrect. The Examiner's conclusion was based on the fact that there exists a well known relationship between piston vibration and misfire occurrence. As evidence to such a relationship, the Examiner has introduced the teaching of Komurasaki (5,119,783) where in col. 2, lines 10-30 thereof the disclosure is made that a relationship between engine vibration and misfire detection exists.

CONCLUSION

THIS ACTION IS MADE FINAL. Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

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A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the Examiner should be directed to Eric S. McCall whose telephone number is (571) 272-2183.

The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Eric S. McCall
Primary Examiner
Art Unit 2855
Feb. 25, 2005

